

The background of the slide is a dense field of various viruses, rendered in a golden-yellow color against a dark, almost black, background. The viruses are depicted in different shapes and sizes, including spherical ones with surface spikes (like coronaviruses), rod-shaped ones, and others with more complex, multi-layered structures. They are scattered across the entire frame, creating a sense of a microscopic world teeming with viral life.

Viruses

Amanda, Kristin, Jessica
and
Lucas

Structure Of A Virus

A virus can range in size from the smallest being 10nm to the largest being 400nm.

Did you know that a virus is so light that it can float in air or water?

Virus can basically fit anywhere and can be passed on to other organisms if touched.

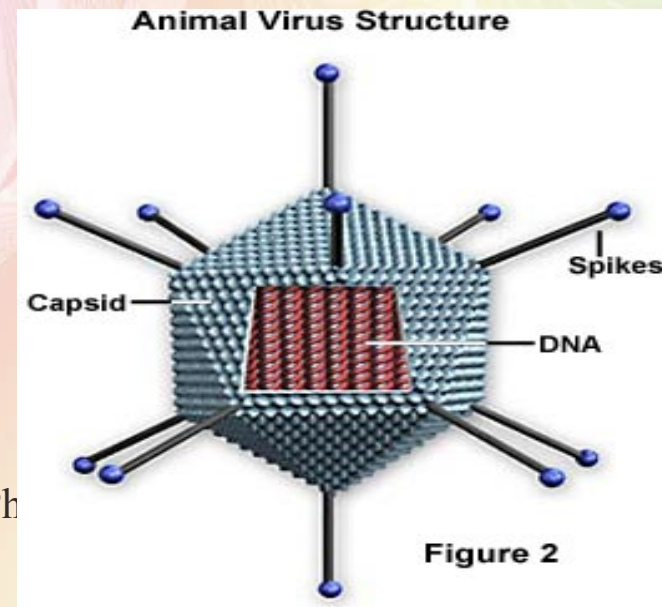
The basic structure of a virus cell is predominantly made up of two shapes; spheres, rods or filaments.

The rod shapes occur from the linear array of the nucleic acid and the protein subunits making up the capsid.

The sphere shape is not actually a sphere, it's a 20 sided polygon (icosahedrons)

Virus cells can be identified in two different ways. They are RNA (ribonucleic acid) and DNA (deoxyribonucleic acid). These are a structured protein coat that surrounds nucleic acids they invade hosts to reproduce.

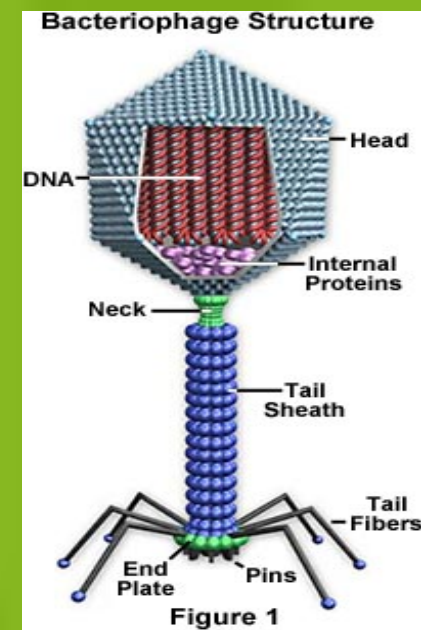
All viruses contain nucleic acid either DNA or RNA but never both. Although it may vary. There are two different types of protein. They will create the protein coat. Which holds the nucleic acid. Some viruses are also enclosed by an envelope of fat and protein molecules. The basic structure of a virus cell is predominantly made up of two shapes; spheres, rods or filaments. The rod shapes occur from the linear array of the nucleic acid and the protein subunits making up the capsid. The sphere shape is not actually a sphere, it's a 20 sided polygon (icosahedrons)



Capsid: the capsid is a protein shell that encloses the nucleic acid, also called the Nucleocapsid.

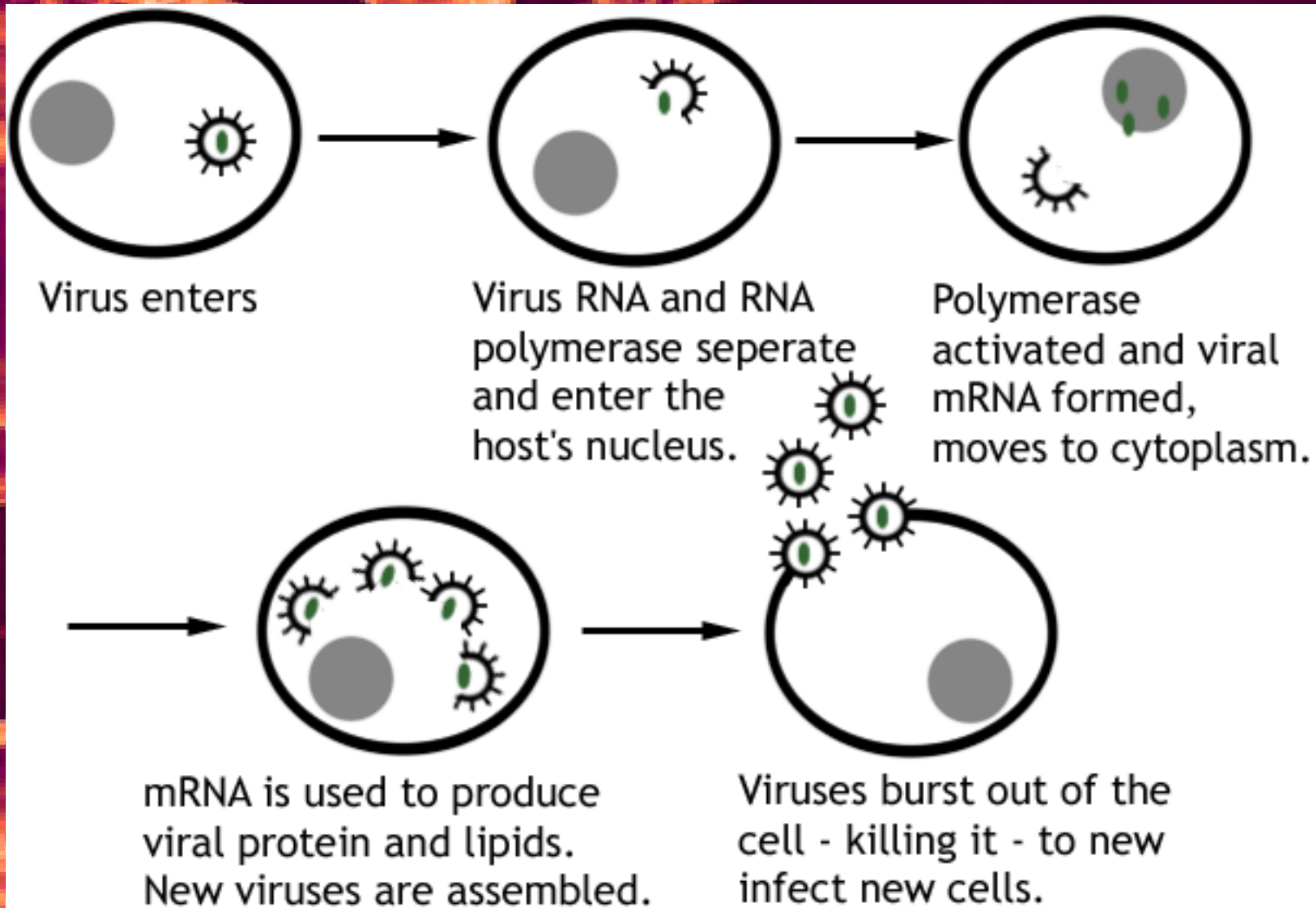
Envelope: many viruses have a glycoprotein envelope surrounding the nucleocapsid. The envelope is composed of two lipid layers with protein molecules and may contain material from the membrane of the host cell.

Nucelic Acid: just as in a cell, the nucleic acid of each virus holds the genetic information for the synthesis of all proteins. Only a few groups of viruses actually use DNA. Most maintain all genetic information with the single stranded RNA.



Mode of Reproduction

Viruses reproduce asexually by grabbing onto a host cell and injecting itself inside. Once inside, the viral wall breaks down and releases DNA into the host cell. The Viral DNA makes copies of itself from raw materials within the host cell. Each new replica re-makes a wall and the new viruses are released in a large amount, causing the host cell to possibly become destroyed.



Number of Species

There is well more then 1.500 species of viruses that have been recognized today.

but out of that number there are only about 5 thousand viruses that can be described in detail.

Out of each of thoes they can be broken down into subspecies and even further than that.

Although there are many different types. Some of thoes viruses include;

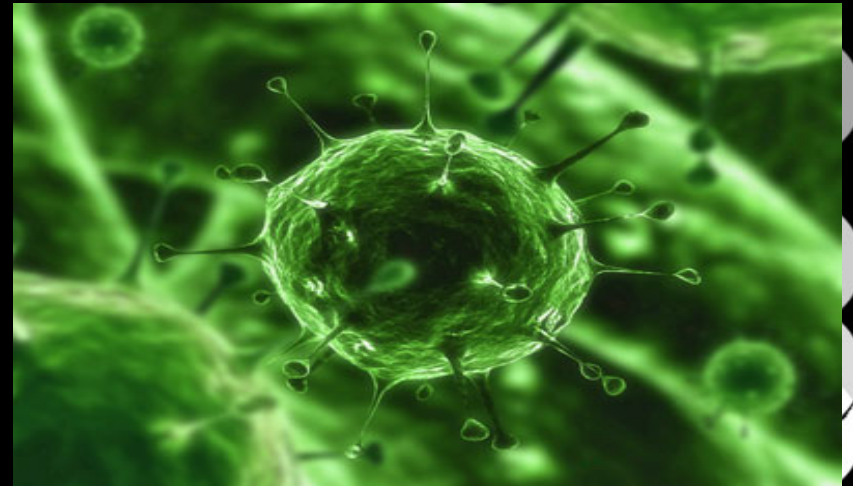
HIV

SARS

Smallpox

H1N1

Avian flue, and many more.



Intresting Facts

In 1982, Ivanovski in Russia discovered that a filter would hold back bacteria that would pass the agent that caused mosaic disease in tobacco. That agent was smaller than a bacterium.

In 1911 Peyton Rous discovered that one agent that passed through bacteria filters could cause cancer. But it wasn't till 55 years ago that they realized how critical his discovery was to unravelling the problem of cancer.

Viruses only grow inside of cells. They cannot multiply in the environment. To some extent they are dead objects when not with a host cell. There are many debates whether viruses are alive or dead. This is because when you crystallize them they behave like crystalline protein and are like dead chemical objects.

How Do Viruses Infect Cells

Step 1: Adsorption- virus binds to host cell

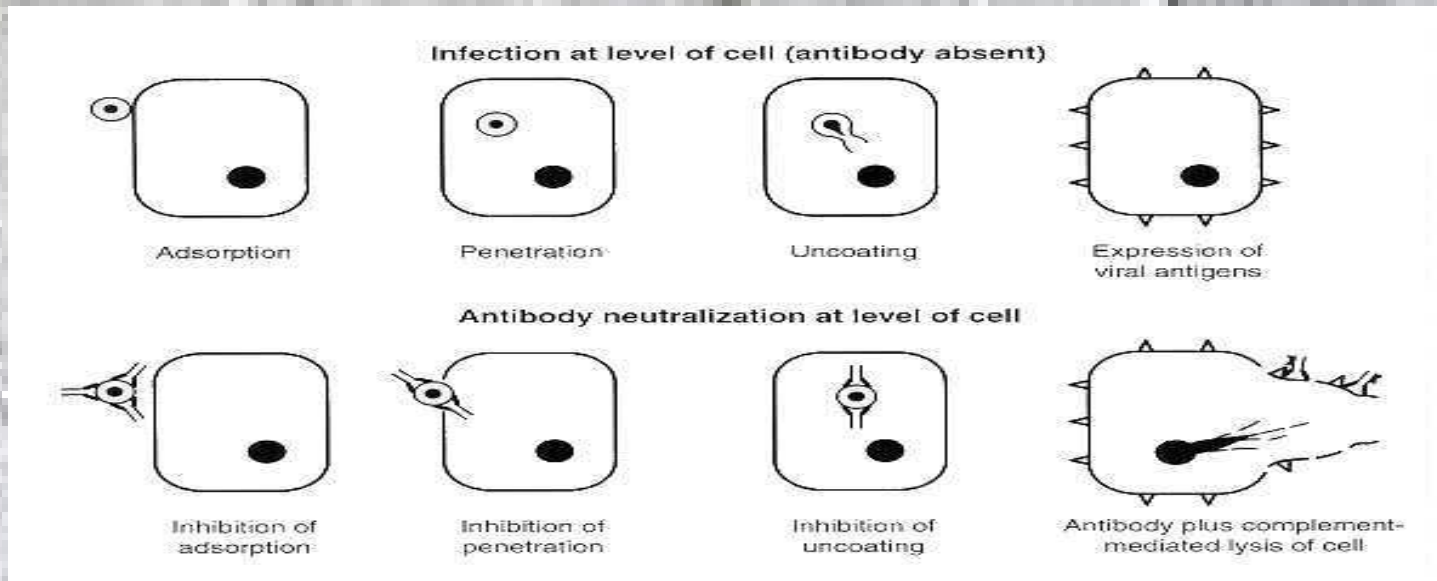
Step 2: Penetration- Virus injects genome into host cell

Step 3: Viral Genome Replication- viral genome replicates using the host cellular machinery

Step 4: Assembly- Viral components and enzymes are produced and begin to assemble.

Step 5: Maturation: Viral components assemble and viruses fully develop

Step 6: Release: Newly produced viruses are expelled from the host cell



Bibliography

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Photos

-<http://health.howstuffworks.com/medicine/modern/light-virus.htm>

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-http://www.biologyjunction.com/virus_notes_b1.htm

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-<http://www.ictvdb.org/ICTVdB/00.029.0.03.037.htm>

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